

✓ 1. A method for deinking wastepaper comprising the steps of

- i) pulping the wastepaper at a pH between 4 and 8.5 in the presence of deinking agent comprising a lipase and a fatty acid ester; and
- ii) removing the thereby dislodged ink particles.

2. A method according to claim 1, wherein the consistency in step i) is from about 0.5% to about 15%. *(A)*

Suba- 3. A method according to any of the preceding claims, wherein the wastepaper comprises old newspapers (ONP).

4. A method according to claim 3, wherein the amount of ONP constitutes at least 10% by weight of the total amount of wastepaper.

5. A method according to claim 4, wherein the wastepaper consists essentially of ONP.

6. A method according to any of claims 1-2, wherein the wastepaper comprises waste magazines (WM).

7. A method according to claim 6, wherein the amount of WM constitutes at least 10% by weight of the total amount of wastepaper.

8. A method according to claim 7, wherein the wastepaper consists essentially of WM.

9. A method according to any of claims 1-2, wherein the wastepaper comprises ONP and WM.

10. A method according to claim 9, wherein the wastepaper comprises 1-60% by weight of WM and 40-99% by weight of ONP.

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11. A method according to any of the preceding claims, wherein the pulping with the deinking agent is carried out at a pH between 4.5 and 8.5.

12. A method according to any of the preceding claims, wherein the pulping with the deinking agent is carried out at a temperature from 25 to 75°C.

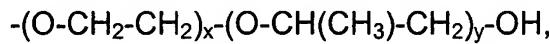
13. A method according to any of the preceding claims, wherein the fatty acid ester is a methyl ester, an ethyl ester, a *n*-propyl ester, an isopropyl ester, a *n*-butyl ester, an iso-butyl ester, a sec-butyl ester, a *tert*-butyl ester, a monoglyceride, a diglyceride or a triglyceride of a C₆-C₂₂ fatty acid, the C₆-C₂₂ fatty acid being optionally substituted with one or more hydroxy, ethoxy, *n*-propoxy and/or isopropoxy groups.

14. A method according to any of claims 1-13, wherein the fatty acid ester is a C₆-C₂₂ fatty acid, which has been alkoxylated with ethylene oxide, propylene oxide, or a combination thereof.

15. A method according to claims 13 or 14, wherein the fatty acid moiety of the fatty acid ester is selected from the group consisting of caproic acid (6:0), enanthic acid (7:0), caprylic acid (8:0) pelargonic acid (9:0), capric acid (10:0) undecylenic acid (11:0), lauric acid (12:0), tridecyclic acid (13:0), myristic acid (14:0), palmitic acid (16:0), stearic acid (18:0), palmitoleic acid (16:1), oleic acid (18:1), elaidic acid (18:1), ricinoleic acid (18:1), linoleic acid (18:2), linolenic acid (18:3) and mixture thereof.

16. A method according to claims 13 or 14, wherein the fatty acid moiety of the fatty acid ester is substituted with one or more ethoxy and/or isopropoxy groups.

17. A method according to claim 16, wherein fatty acid moiety of the fatty acid ester is substituted with ethoxy and isopropoxy groups of the general formulae



$-(O-CH_2-CH_2)_x-(O-CH_2-CH(CH_3))_y-OH$,
 $-(O-CH(CH_3)-CH_2)_y-(O-CH_2-CH_2)_x-OH$, or
 $-(O-CH_2-CH(CH_3))_y-(O-CH_2-CH_2)_x-OH$,

wherein x is an integer in the range from 1 to 25, and y is an integer in the range from 1 to 10.

18. A method according to claim 17, wherein x is an integer in the range from 1 to 10, and y is an integer in the range from 1 to 5.

Sub a3 19. A method according to any of claims 14-18, wherein the fatty acid ester is a triglyceride.

20. A method according to claim 19, wherein the fatty acid ester is Hartaflot G-5000TM.

Sub a4 21. A method according to any of the preceding claims, wherein the pulping step is carried out in the presence of a starch degrading enzyme.

22. A method according to claim 21, wherein the starch degrading enzyme is an amylase.

Sub a5 23. A method according to any of the preceding claims, wherein the pulping step is carried out in the presence of a cellulase.

24. A method according to claim 23, wherein the cellulase is a mono component cellulase.

25. A method according to claim 24, wherein the cellulase lacks a cellulose binding domain.

Suba

26. A method according to any of the preceding claims, wherein the lipase is added in an amount corresponding to 0.001 – 0.15% by weight of the dry pulp.

27. A method according to any of the preceding claims, wherein the fatty acid ester is added in an amount corresponding to 0.025 - 1% by weight of the dry pulp.